WHAT IS CLAIMED IS:

SUB A2

1. A method for predicting patient responsiveness to a 5-HT_3 receptor antagonist, said method comprising:

(a) determining genotype of the promoter region of said patient's 5-HTTP gene; and

(b) correlating said genotype with patient responsiveness.

2. The method of claim 1, wherein said 5-HT_3 receptor antagonist is used in a treatment for diarrhea-predominant irritable bowel syndrome.

SUB B1

3. The method of claim 1, wherein said 5-HT_3 receptor antagonist is selected from the group consisting of: alosetron, ondansetron, granisetron, tropisetron, and dolasetron.

4. The method of claim 1, wherein said 5-HT_3 receptor antagonist is alosetron.

SUB A3

5. The method of claim 1, wherein said genotyping step comprises:

(a) amplifying a nucleic acid comprising the promoter region of said patient's 5-HTTP gene to obtain an amplified product; and

(b) determining the size of said amplified product to identify a long variant/long variant, short variant/long variant, or short variant/short variant genotype of the promoter region of said patient's 5-HTTP gene.

6. The method of claim 5, wherein said correlating step comprises relating said long variant/long variant, short variant/long variant, or short variant/short variant genotype with patient responsiveness.

7. The method of claim 6, wherein said long variant/long variant genotype is related to a greater patient responsiveness than said short variant/long variant genotype.

SUB A4

8. The method of claim 6, wherein said patient responsiveness is determined by measuring a patient parameter.

9. The method of claim 6, wherein said patient responsiveness is determined by comparing a measured patient parameter with a pre-determined clinically significant threshold.

10. The method of claim 9, wherein said measured patient parameter is a net negative change in a geometric center of colonic transit after treatment with said 5-HT_3 receptor antagonist.

11. The method of claim 9, wherein said pre-determined clinically significant threshold is a net negative change in the geometric center of colonic transit of at least about 1.14 colonic regions.

12. A method for treating a patient with diarrhea-predominant irritable bowel syndrome comprising:

(a) obtaining a biological sample from said patient;

(b) genotyping the promoter region of said sample's 5-HTTP gene; and

(c) administering to said patient an effective amount of a 5-HT_3 receptor antagonist if said patient has a long variant/long variant genotype in the promoter region of the 5-HTTP gene.

13. The method of claim 12, wherein said biological sample is selected from the group consisting of a blood and a tissue sample.

14. A method for identifying a patient population for inclusion in a 5-HT_3 receptor antagonist clinical trial comprising:

(a) obtaining a biological sample from a potential participant in said clinical trial;

(b) genotyping the promoter region of the 5-HTTP gene contained within said biological sample; and

(c) identifying said potential participant as suitable for inclusion in said patient population based on the presence of a long variant/long variant genotype in the promoter region of said potential participant's 5-HTTP gene.